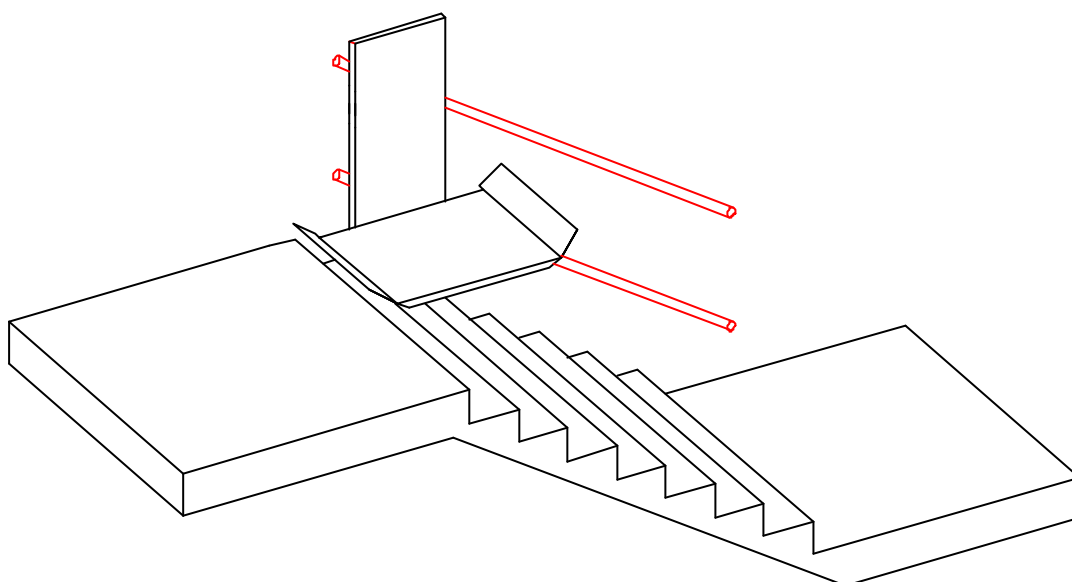




Installation Manual



≡DELTD≡
Treppenlift
CE

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Observe the following points before installation!

This installation manual is written for all installation teams authorised by *Lehner Lifttechnik*.

Installation teams must have a general knowledge in

- working on electric controls.
- reading and understanding circuit diagrams and wiring schematics.

Note: The installation manual MUST only be used together with a training of the installation team by *Lehner Lifttechnik*!

In order to save time and energy, it is wise to be properly prepared before installing the **DELTD** -platform lift. The following points will assist in completing the installation efficiently and on schedule.

- Have a complete tool kit on hand.
- Check the packages for shipping damage and missing parts before bringing the lift to the site.
- Open the installation package (which is in the box of the **DELTD** lift). Review the enclosed Installation notes, if supplied. In some cases, additional components must be brought to the site.
- Contact the customer and arrange a time for installation. Ensure that the main power will be supplied on time.
- Assemble a team of two technicians to mount the plant.
- Inform the customer once you arrive that you will be occupying the stairway, and that you may need to rope it off.
- Read the sections for any optional equipment that is supplied with the lift before beginning the installation.

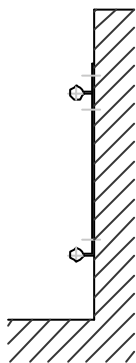
Beginning the Installation

- There may be special installation notes enclosed with your particular lift. Read these instructions thoroughly before proceeding.
- Refer to the rail layout drawing and familiarise yourself with the rail configuration.
- Ensure that the main power hook-up will be completed before the end of the installation.
- Bring the rail parts to their installation location. Bring the platform to the upper landing!

Caution: The large platform is heavy; it weighs approximately 120 kg.
A dolly might be necessary.

Installing the Railway

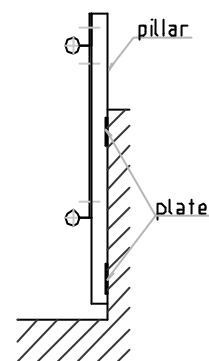
- **Note:** See the following diagrams for some typical mounting arrangements. The bows between the rails of the railway can be mounted on pillars or on the wall.



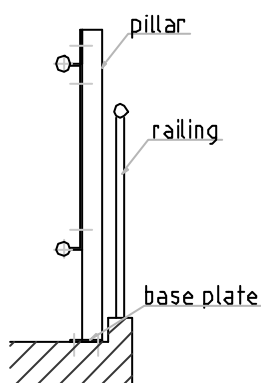
Mounting onto the wall.

NOTE!

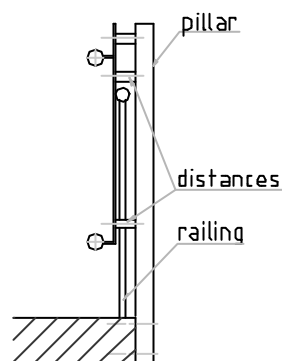
The installation company is responsible for the fixing material into the wall or staircase! Fixing materials are not included in Lehner Lifttechnik delivery - spezifikation, because they depend on the wall or staircase material (concrete, bricks....)!



Mounting on pillars.
Pillar screwed on the wall of the staircase.

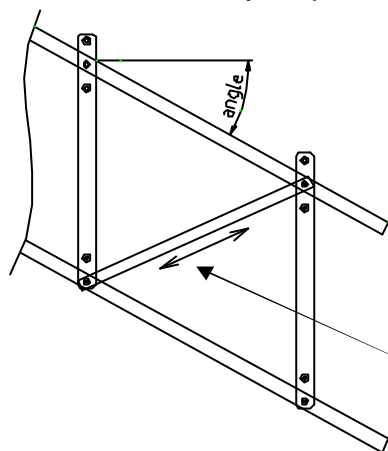


Mounting on pillars.
Pillar mounted onto the steps.



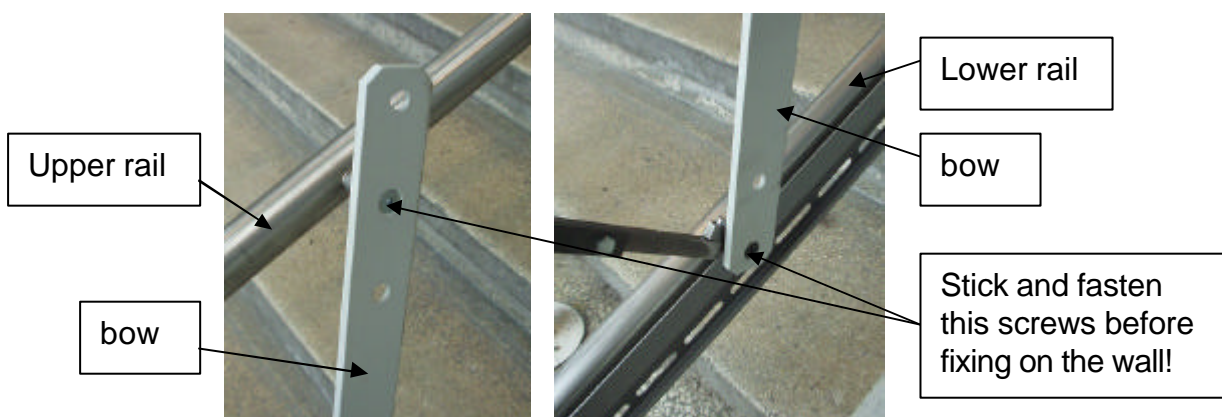
Mounting on pillars.
Pillar screwed onto the side of the stairs.

- First adjust the angle of the railway by using the special, adjustable tool according to the angle shown on the layout plan. Adjust the tool while fixing the tool on the rail.



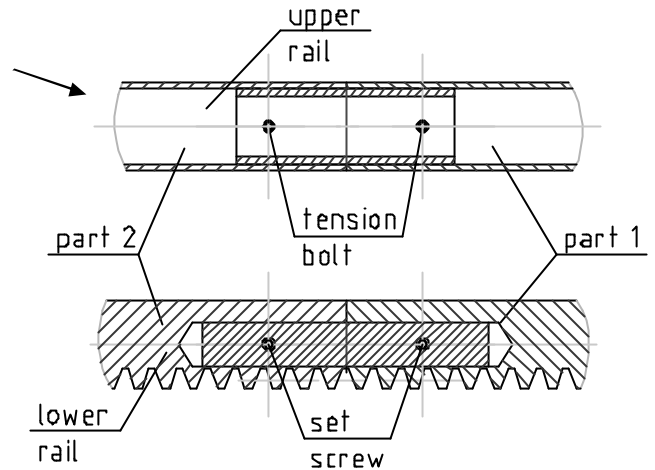
Adjust the angle with
the spezial tool

- Now stick and fasten all screws on the backside of the railway after adjusting the angle – you will not have a chance to fix them after mountin the railway on the wall or on pillars!



- Choose the screw materials and dimensions (screw materials like lag bolts, nuts, washers, etc., are not included in *Lehner Lifttechnik* delivery-specification) with reference to the possibility of fixing (pillars, brickwall, concrete wall, wood,... see on page 3) and **with reference to the calculated forces**.
- **Note:** It is necessary to distinguish between brackets (to bridge the distance to the wall or pillar) and distances (for unevenness of walls or mounting tolerances). Brackets can be ordered from Lehner Lifttechnik, but for distances you must use washers or shims with 50 mm in outside diameter.

- **Wall Mounted Unit:** Place the first rail section onto the wall, in reference to the measures shown in the layout drawing. Affix the first section to the wall provisionally and be sure the bows behind the railway are in plumb line. If there are more rail sections, take the second one and connect it with the first rail section. Check each splice for damage and lightly grease both ends before joining the rail sections. Fix the parts by using tension bolts for the upper rail and set screws for the lower rail. Look at the plumb of the bows, at the measures shown in the layout plan and fix the rail section provisionally. Continue in this manner until reaching the last section. Then check the measures between the staircase and the railway according to the layout drawing. Fix the wall mounted units with dowels, adhesive anchors, wood screws, etc., depending on the material of the wall.



- Check each splice of the rail for damage.
- Check the correct angle of the railway by using an angle water level once more!

Use an angle
water level



- **Caution:** Make sure the fixing of the rail is save!
- Note that when a lift is supplied with distances that must be located in core-drilled holes, it will be necessary to mark the holes and remove the rails for core drilling at this stage. The lift can then be relocated for installation.
- **Pillar Mounted Unit:** Depending on the order, the pillars and distances can be delivered from Lehner Liftechnik or you can produce them yourself by referring to our layout drawing and the existing forces. If the lift is supplied with mounting brackets, install them with the corresponding rail section.
- Fix the first pillar as shown in the layout plan on the bottom or on the side of the stairs.
- Drill the mounting holes, starting at the bottom with Pillar A and working up the system. A good quality hammer drill is useful when drilling into concrete.

- When using a lag bolt, pass the lag bolt through a washer, and screw it into the end of a plug anchor. The anchor can then be tapped into position using a small hammer. Avoid spilling dust into the hole.

Note: Do not use plug anchors when mounting into wood.

- Drill and fasten each hole in turn; this will prevent the tower from shifting.



- It will now be possible to place the first rail section and secure it onto the first pillar with a screw clamp. Adjust the rail into its right position, then drill a thread M10 into the pillar (the pillar requires a minimum of 4mm wall thickness).

Note: Do not ream the holes for the thread! We need the hole 4mm thickness of the pillar for the mechanical stability of the thread!

- You can go on with the next pillars and next rail sections. The connection of the railparts is shown on page 5.



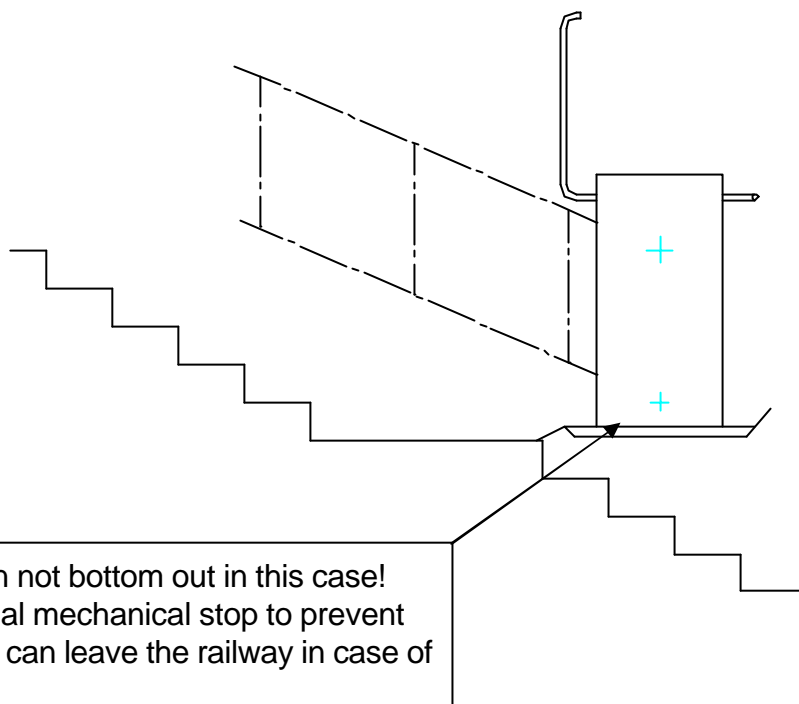
use a screw clamp
during erection

Note: The support pillars have the serial letters stamped on the base. You can find the corresponding serial letters in the layout drawing.

- Check the clearance dimensions between the rail and the staircase. Ensure that the actual measurements correspond with the clearance dimensions on the layout drawing. If they do not meet the required clearances, have the lift serial number on hand and call *Lehner Liftechnik*.
- **Remember:** Vertical clearances are measured from the underside of the rail to the stair nose or to the floor.
- Install the rest of the pillars. Remember to check the pillar numbers with those shown on the rail layout drawing.
- On longer lifts some discrepancies may occur. Try to average them out while making a final check for landing clearances, splice alignment and fit.

- With the system in place, check that all struts and support pillars are plumb. Use a water level for this work!
- With the rails in position, check all splice connections for alignment. Note that the proper fit of the splices is critical to ensure smooth lift operation. When fixing the lift in place, smooth out any misalignment using shims behind the mounting struts.
- Clean any debris from the outside of the rails.

- **Note:** Make sure the platform is not able to leave the railway on the lower landing! Use the additional mechanical stop in case where the platform does not touch the lower landing! The mechanical stop is described in paragraph "adjust the ultimate limit switch"!



Caution: The installation team and the installation company are responsible for a correct and secure fastening of the rail. The producer of the lift can not assure for a good and secure fastening.

Installing the carriage with the drive

When the rail system is anchored in place and you are satisfied that everything is as it should be, mount the platform.

- Dismantle the battery charger, the mechanical limit block and the charging ramp from the upper end of the railway, if they are installed already.
- The large platform is heavy; it weighs approximately 120 kg. A dolly might be necessary and the platform should be carried by two persons at all time to ensure safety and avoid damage!
- The platform should have been brought to the upper landing before fitting the railway already to prevent a damage of the rail and platform during transport on the staircase.
- Remove the packaging from the platform.
- Dismantle the platform from the carriage. Beginn with the connections between slider and platform first, then remove the bolts between platform and carriage.

Remove the
connection first



Remove the bolts between
platform and carriage

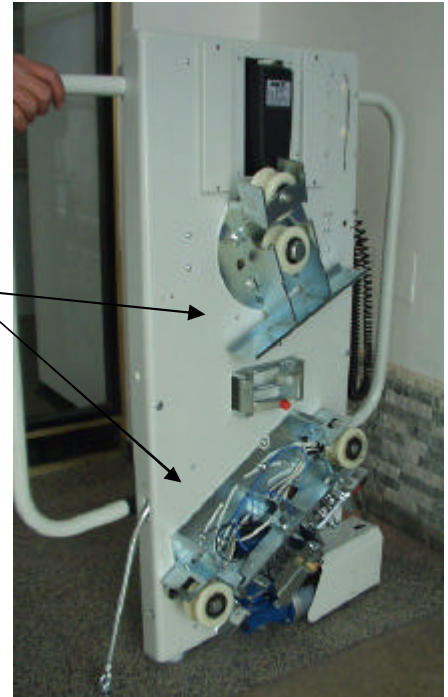


Note: Dismantle the connection between slider and platform first!

Caution: The barriers are without support now – they will fall down – watch your head!

- Dismantle the upper and lower covers from the carriage, the batteries must not be installed during the carriage installation. The sidewall should look as shown on the picture beside!

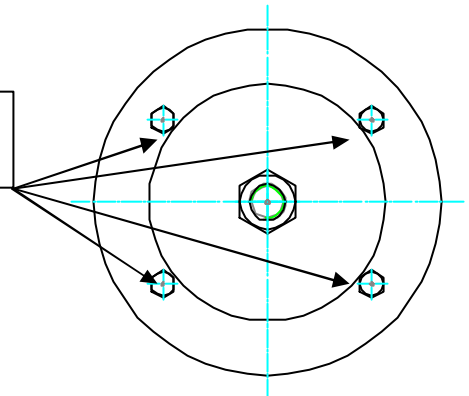
The backside of the platform should look like on this picture!



- Open the upper front side of the carriage by using a hexagon socket wrench.
- Open the lower front side of the carriage by using a hexagon socket wrench.

- Loosen the four nuts from the **upper** carriage on the inside of the sidewall, so the carriage can be turned and adjusted to the angle of the railway.

Loosen this nuts!

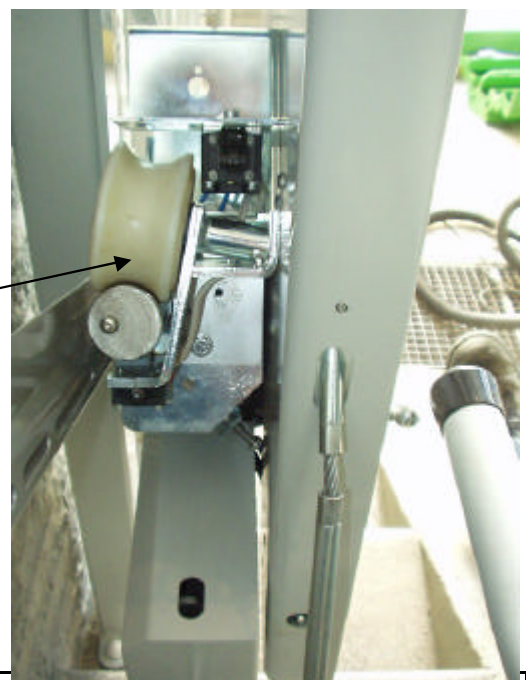


Caution: Do not remove the nuts – else the carriage can fall down!

Note: Do not loosen the nuts from the lower carriage! The lower carriage is adjusted from Lehner Liftechnik already and **must not** be changed!!

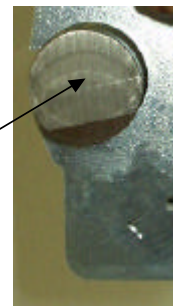
- Carefully lift the carriage into position, guiding the carriage rollers onto the rail.

Caution: The batteries must not be installed at this time and the main power switch must be off!



- Insert the handwheel into the gear motor, loosen the brake of the motor by using the break lever and turn the handwheel into the downwards direction. Always watch the interference of the toothwheels (drivewheel and overspeed governor) and the rack. Also have a look at the guide holes of the overspeed governor. They should fit to the rack! If there are any troubles (if the winding is very strong,...) first have a look at the toothwheels – do not use too much power – dismantle the platform again and insert the platform new!

Have a look at the guide holes of the overspeed governor! The rack should glide slightly through the holes!

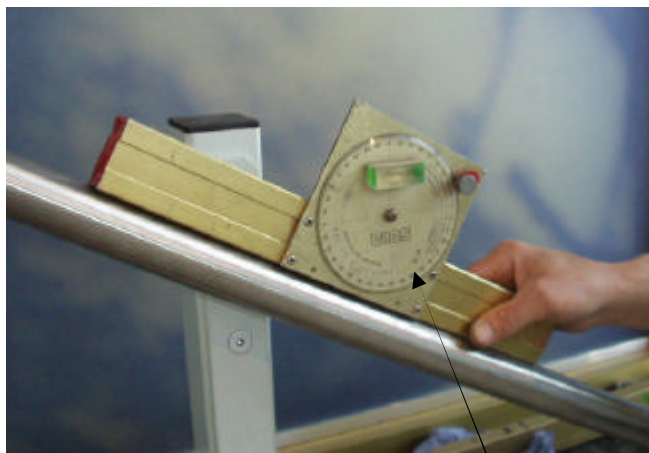


- **Note:** Do not use the motor for riding the carriage onto the rails! The toothwheels of the drive and the overspeed governor will be damaged!
- Move the platform with the handwheel until the complete lower carriage is safely running on the rail.
- Install the batteries on the backside of the carriage (see extra paragraph “installing the batteries”).
- Switch on the mains power switch when the platform is safely on the railway.
- Install the batteries into the call stations (or install the power supply for one call station provisional), turn the key switch to ON position and send the carriage into the middle between the upper and lower landing.

Note: To ride the carriage with batteries, it is necessary that switch S11 operates!

- Turn back the key switch from the call station to OFF position and switch off the main power switch too.

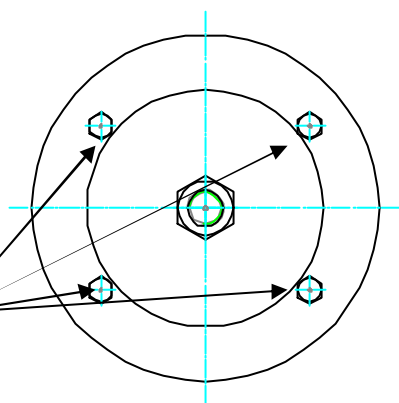
- Adjust the upper carriage in plumb line by using a water level.
- Adjust the angle of the upper carriage with reference to the angle of the railway. By using an angle water level.



Use an angle waterlevel for
adjusting the upper carriage!

Note: After adjusting the angle of the upper carriage, fix the four nuts of the upper carriage again. This **MUST** not be forgotten, else the carriage will fall down!

Fasten this
nuts!



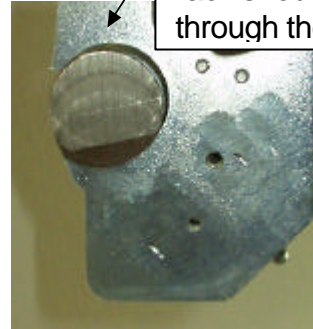
- Run the carriage once up and down on the railway and adjust the overspeed governor now. Have a look, that there is a constant gap between the rack and the guide holes in the overspeed governor. Fix the overspeed governor with the screw and check the function of the overspeed governor by pressing the red lever during the drive.

Use this screw for fixing
the overspeed governor



Red lever

Have a look at the guide holes
of the overspeed governor! The
rack should glide slightly
through the holes!

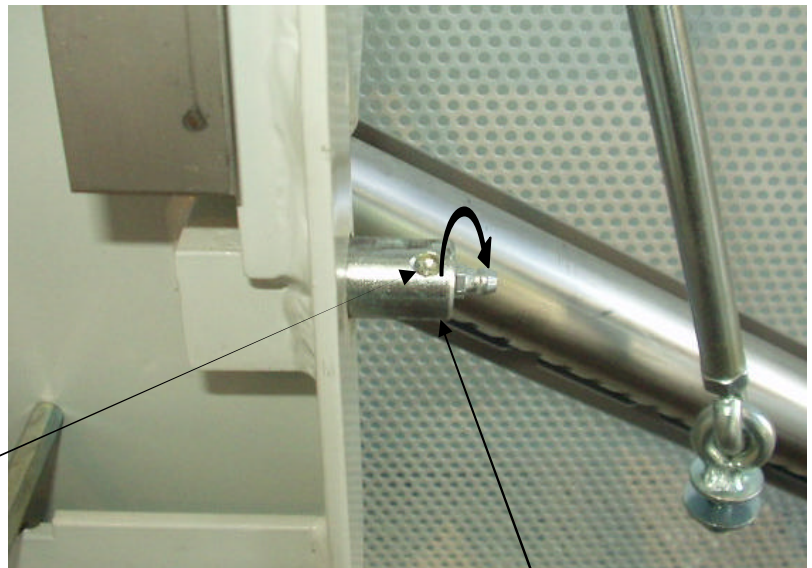


- Reinstall the charging ramp, the mechanical limit block and the battery charger to the upper end of the railway.

Foto einfügen von
oberer Ladekurve

Reinstall the platform onto the carriage!
Insert the main bolts and fix them with
the threaded pin! Fix the connections
between the platform and the carriage
again!

blind hole for
threaded pin

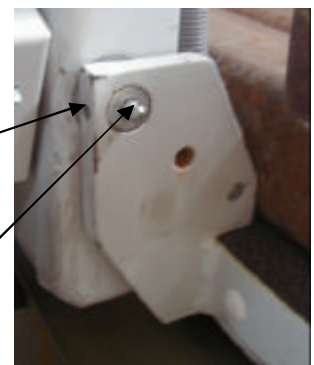


main bolt

Caution: Check carefully that the threaded
pin joins into the blind hole in the main bolts!
Else the main bolts can get loose and the
platform can fall down from the carriage!

threaded pin

main bolt



- Do not close the carriage with the upper and lower front side yet. It needs to be open in order to test the power functions after the installation has been completed.

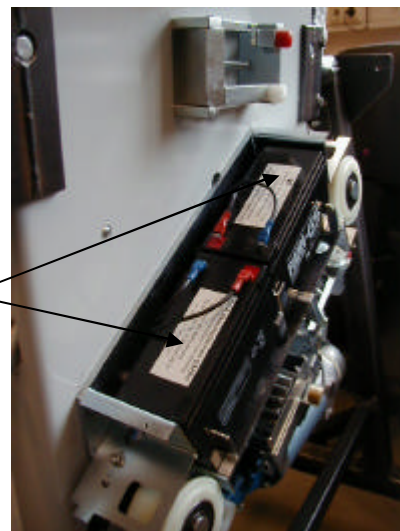
install the
connection again



Installing the batteries

- Insert the batteries in the device in the lower carriage, connect them in refer to the electric diagram (and the layout drawing).

batteries in the
lower carriage



- If there are two additional batteries in case of a long travel way, that means four batteries in summary, two batteries have to be situated in the left and right device near the upper carriage.

Install two additional
batteries near the upper
carriage – if necessary!

Fix the batteries
with this belt!

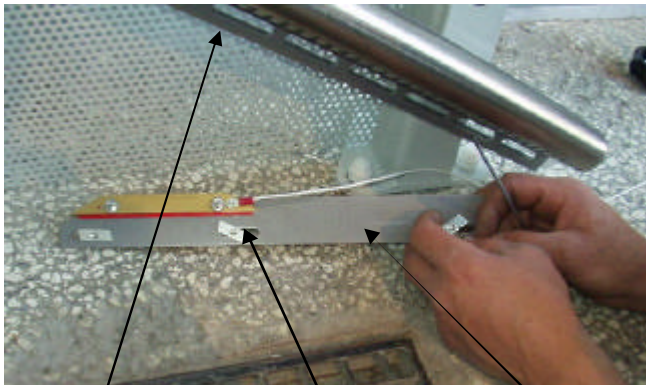


Installing the Electric and the Call Stations

- Instruct the person who will be supplying the main power to connect the main leads to the battery charger. Refer to the electric diagram (and the layout drawing).

Note: Stairlifts require a 230V service.

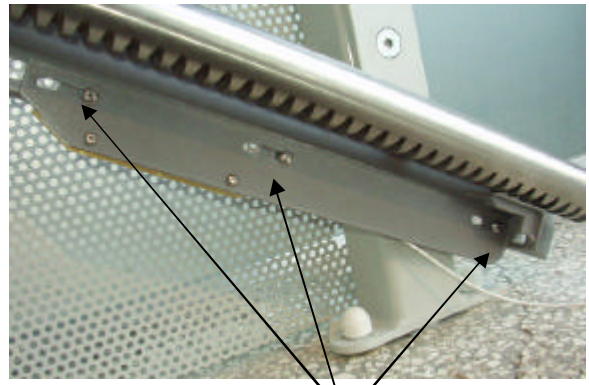
- Install the battery charger and connect the loading ramps according to the electric diagram.



Steel plate with
holes for fixing

Limit assembly

Connect the wires between
the battery charger and the
loading ramps



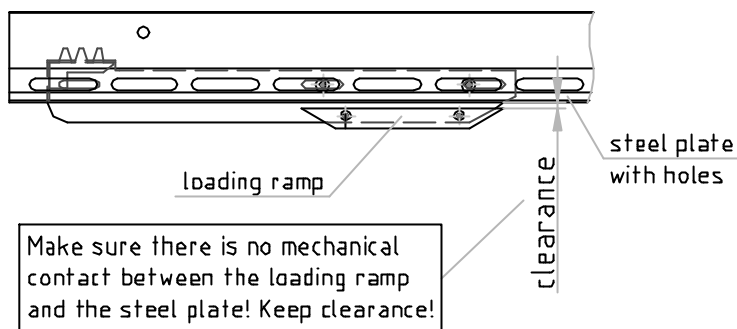
Fit the limit assemblies to the
upper and lower landing with
this screws to the steep plate.



Fit the battery charger at the
upper end of the railway

- Fix the limit assemblies on the steel plate in the upper and lower landing.

Caution: Make sure a clearance keeps between the steelplate profile for fixing and the charging ramp! Else the steelplate and so the complete railway is connected with the battery charger! This is not allowed!



- Complete the field wiring in accordance with the electrical drawings supplied in the installation package. But note that no two systems are the same; you must choose the most effective method of wiring in your situation.
- Set up an extra ground connection according the national regulations of your country.
- Mount the Call Stations, starting with the Call Station at the lowest landing.
- When mounting the Call Station, remember to allow enough clearance for the carriage at the landings, else there will be a clash between the user and the platform! The height of each Call Station should be 1 m, measured from the floor to the centre of the Call Station.
- Install the batteries into the call stations or Wire the Call Stations according to the electrical drawings if the call station is supplied from the battery charger.
- If the Call Station is supplied with a pillar, ensure that the pillar is plumb before mounting the Call Station.
- The following pictures show a typical arrangement of call stations.



Installing the safety pads, Adjusting the limit switches

- Install the safety pads on the lower carriage. Use the tension springs for fixing the safety pads.

Tension
spring

Safety pad



- Run the carriage down to the lower landing and check the landing position.

Note: The buffers on the lower end of the backside of the carriage must touch down slightly on the bottom in the lower stop position.

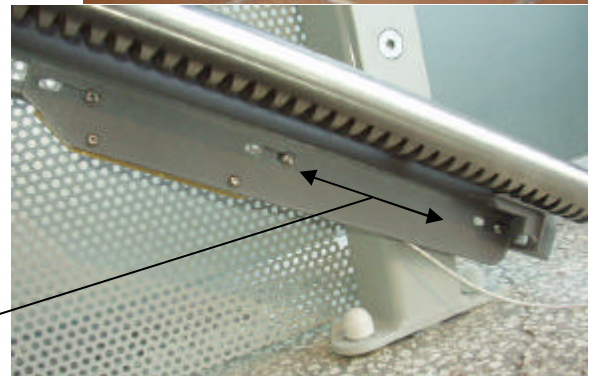
Buffers should touch
down on the bottom!

- The position of the downstairs limit assembly has to be adjusted. Adjust the limit assembly in the direction along the railing. You can adjust the limit assembly in distances of one teeth of the rack. The fine adjustment can be made by adjusting the limit switch.



- After adjusting the limit assembly run the carriage down to the lower landing again until it stops in the desired loading position. The remote control will allow you to watch the platform.

Adjust the limit
assembly in this
direction!



Note: Allow the carriage to bottom out on the lower landing.

- Fine adjust the position of the lower stop of the platform by moving the limit switch.
- Run the carriage out of the landings and back again. If the lift does not stop

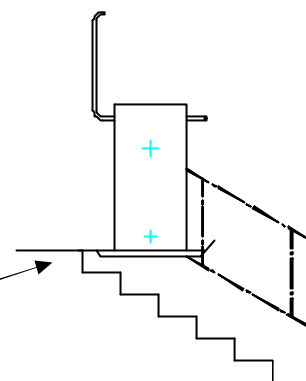
Adjust the limit switch
with this bolt+screw!



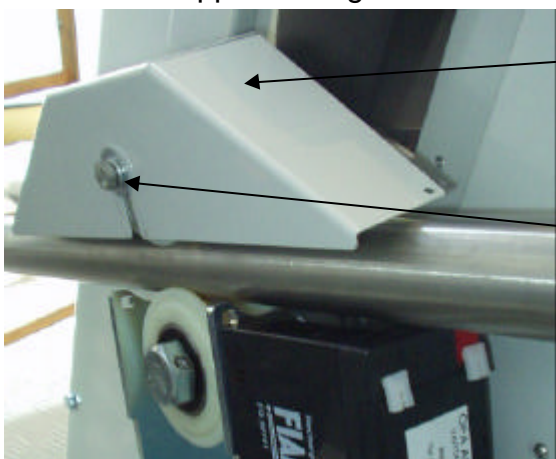
in the correct position, adjust it as necessary.

- In the **upper stop position** (and also intermediate stop positions) the platform should be in one line with the landing height, so the wheelchair driver can leave the platform horizontal without any ramp! Adjust this limit switch in the same way as the downstairs.
- Adjust the ultimate limit switch (see extra paragraph "adjust the ultimate limit switch")!

platform should be in one line with the upper landing!

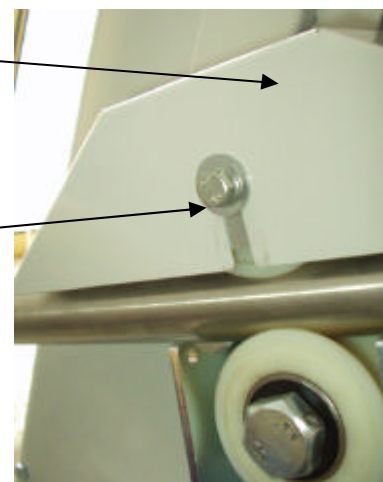


- Install the cover of the upper carriage. Jam the cover with the fixing screw of the upper roll of the upper carriage.

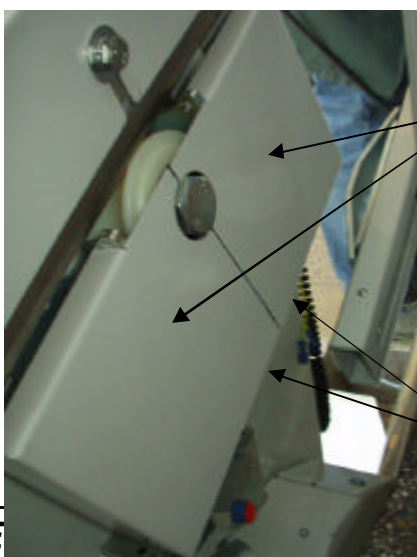


Cover for upper carriage

Jam the cover with this screw!

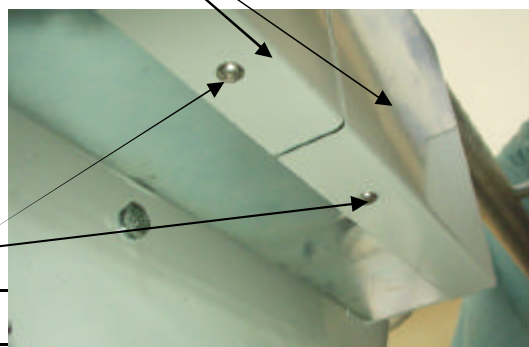


- Install the cover plates above the batteries on the upper carriage (also when you do not use additional batteries on the upper carriage!) and fix them with screws.

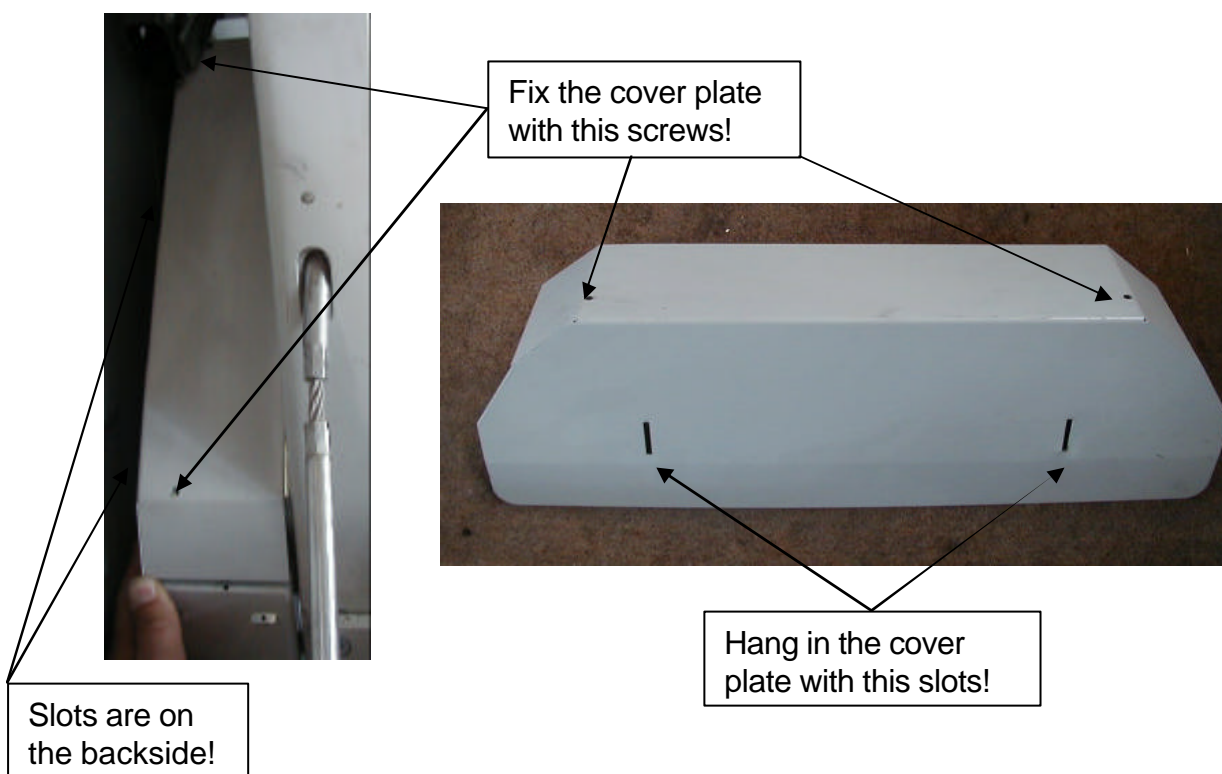


Install this covers on the upper carriage

Fix the covers with this screws on the underside!!



- Install the cover plate above the batteries in the lower carriage and fix them with screws.



Startup the stairlift

Before starting up the stairlift, check the following items:

- All call stations should be supplied with batteries or wired and plugged in.
- All safety and final limit circuits should be wired.
- The wires to the carriage should be properly connected and the carriage emergency stop switch should be released.
- All support pillars (if supplied) should be secure and the strut fasteners should be snug.

Note: The strut fasteners will be fully tightened once the carriage landing locations and stair clearances are checked.

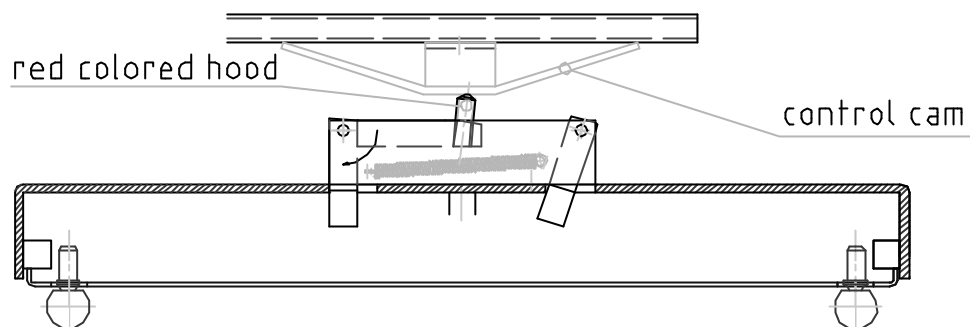
Caution: Do not ride on the lift until all of the fasteners have been fully tightened!

Now you can switch on the building breaker and the mains power switch on the sidewall of the stairlift.

If you encounter problems, refer to the user handbook or technical documentation.

- Unfold the platform and run the unit out of the lower landing for a short distance using the remote control.

Mounting the control cams



- Mount the control cams on the profiles between the upper and lower rail of the railway in the area of the platform stop position.
- Adjust the control cams - the levers for unclamping the barrier should be in the middle of the control cams when the platform arrives in the stop position.

Declaration: the upper lever for unclamping is responsible for the left barrier, the lower lever is responsible for the right barrier! This is regardless of whether you have a left or right handed stairlift!



Note: Mount the control cams according to the description on the layout drawing. Under some circumstances it may be necessary to unclamp both barriers in the lower stop position. Use two control cams in this situation.

Caution: Do not mount two control cams in the upper stop position (or intermediate stop positions)! Else the lower barrier can be opened and the user may fall out of the platform!!

- Add the red colored plastic hood on the lever for the upper barrier – with reference to the emergency rescue of passengers, described in the user manual!

Note: Mount the red colored hood on the lever for the upper barrier only! This is for better identifying of the lever for the person who does the emergency rescue of a passenger. The lower barrier **MUST** not be opened!

Caution: If the red colored hood would be mounted on the wrong lever for the barrier, the user may fall out of the platform in case of an emergency rescue of a passenger.

- Check the functions of the platform.
- Check each operation again for each landing in the system.

Adjust the ultimate limit switch

- An adjustment of the ultimate limit switch in the upper landing is not possible! You have to ensure that when the carriage runs against the limit switch, there is enough clearance to the ultimate limit switch!

Ultimate
limit switch



Note: Ensure there is a distance between the operated limit switch and the ultimate limit switch! Else you will have breakdowns because the lift runs always onto the ultimate limit switch!

- An ultimate limit switch for the lower landing is not provided, because the platform must bottom out on the lower landing and can not leave the railway. If the platform cannot bottom out and could leave the railway in case of a failure in the lower landing, an additional mechanical stop must be installed at the lower end of the railway also!

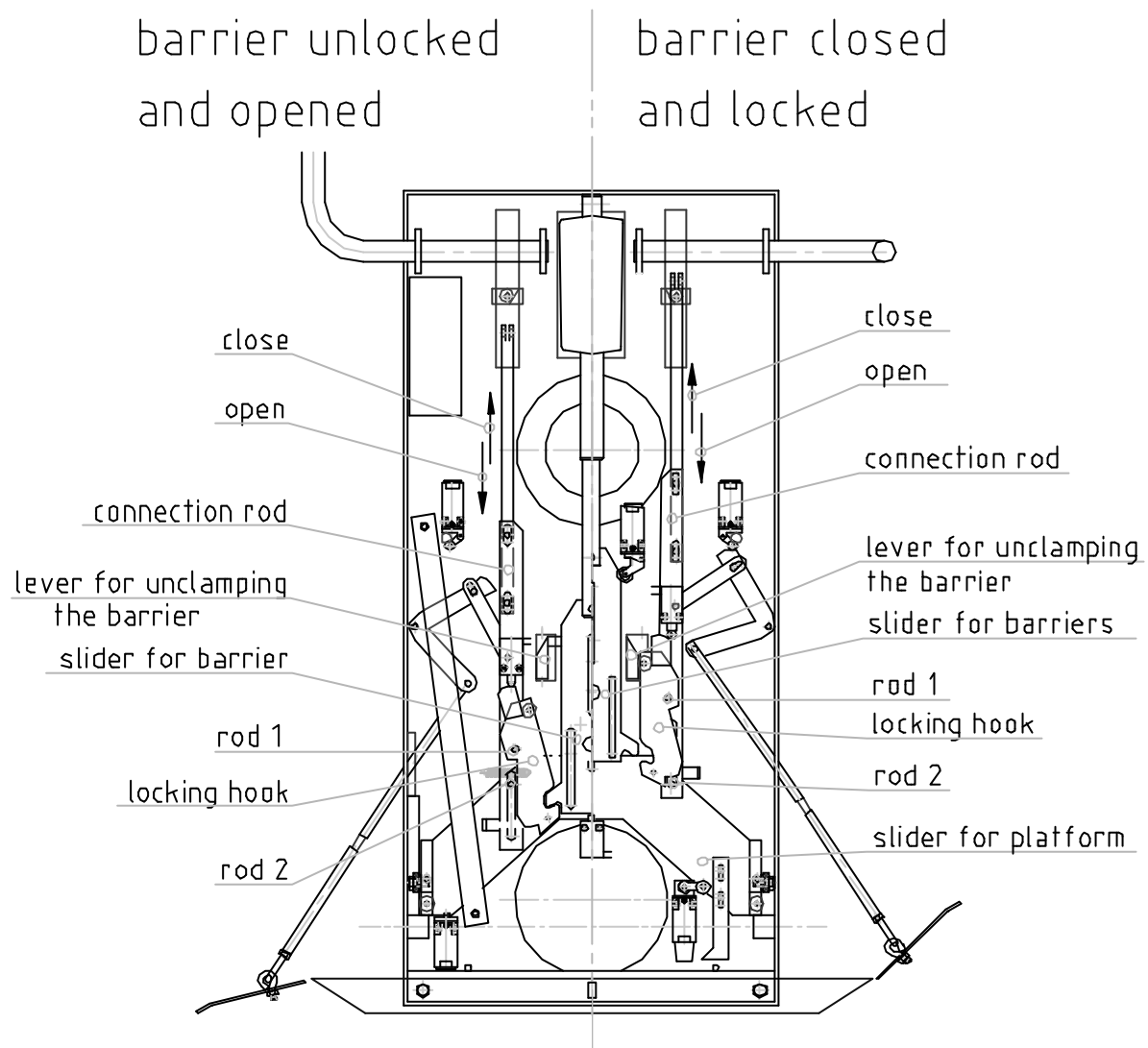
Note: Make sure the platform is not able to leave the railway on the lower landing! Use the additional mechanical stop in case where the platform does not touch the lower landing!

Foto von mechanischem
Anschlag unten einfügen!

Adjust the ultimate limit
switch and the mechanical
limit block together!

Adjusting the platform

- For the following chapter, first look to illustration, to know the definitions of the components.



- To adjust the platform correctly it is necessary that all electric installations (limit switch, emergency limit switch, overspeed governor, call stations, electrical connection of the carriage, etc.) are finished. The front side of the carriage should be opened!
- Adjust the platform into horizontal position first. It is necessary to dismantle the connection between the platform and the slider in the carriage again. Use a water level!

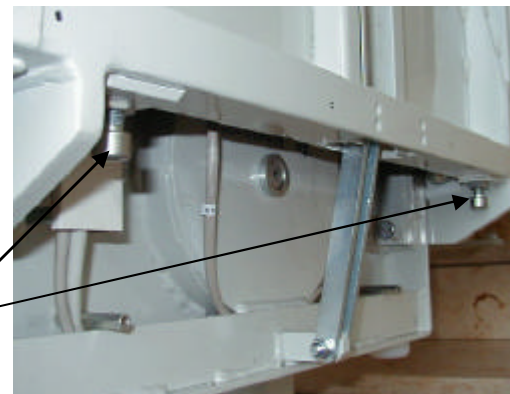


Caution: When the connections are dismantled, the barriers are without support– they will fall down – watch your head!

- Counter the adjusting screw with the counter nut after successful adjustment.

Note: Check the horizontal line of the platform only in loaded condition!

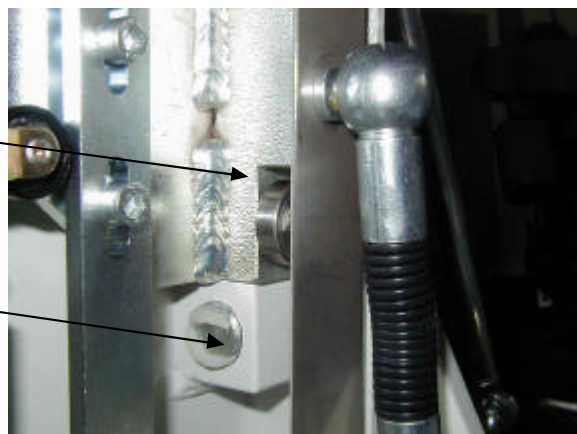
Caution: Check if **both** adjusting screws are supporting the platform!



- Adjust the slider for platform.

Left and right side, the slider must touch the bearing support.

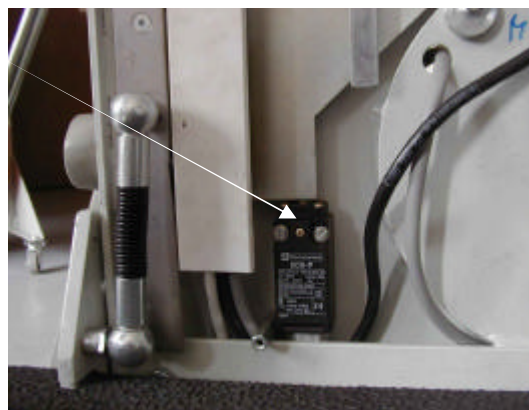
Bearing for lifting the platform



- Mount the connection between platform and carriage again. The platform slider must touch the bearing support on both sides (see illustration). This can be adjusted by changing the length of the connection between the platform and the carriage.

Note: Every time you modify the horizontal adjustment of the platform, it is necessary to adjust also the slider again!

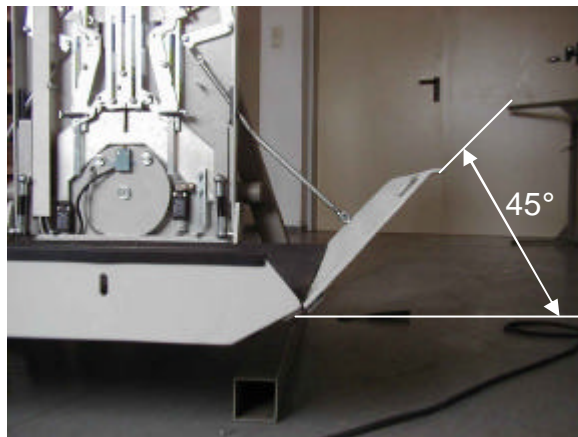
- Move the limit switch S11p, until it makes contact with the platform slider.
- Check the horizontal position of the barriers. They are pre-adjusted from *Lehner Lifttechnik* already, but it could be necessary to finish them on site.
- It is possible to adjust both barriers separately. Open the screw shown in the illustration, adjust the barrier and lock the adjustment with the screw again.
- Adjust limit switch S11m, so the barriers are horizontal position when the automatic platform is opened.
- Adjust limit switch S11o, so the platform is pressed towards the carriage by the automatic drive when the platform is closed.



in

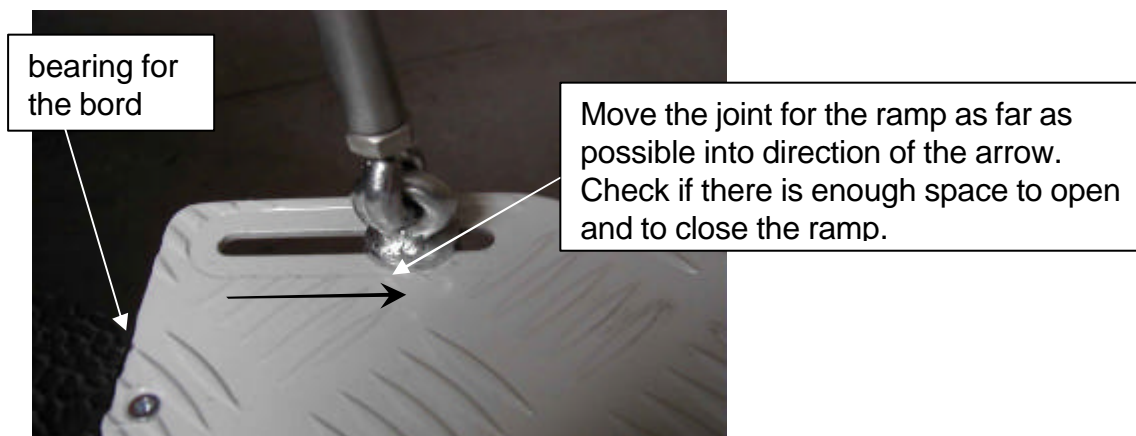
Adjustment of the loading ramps

- Be sure the control ramps on the railway and all limit switches are adjusted before looking for the ramps.
- Adjust the ramps to achieve a **45 ° angle** between the platform and ramp when the barrier is in horizontal position. When the barrier is open, the ramp has to fit to the bottom of the landing area.
- In folded and unfolded position of the platform, the ramps are used as safety pads also. To get a secure switch function it is necessary to move the fixing of the ramps to the outside as far as possible.



Note:

Look for a safety switch function, but do not adjust too “secure”!
This would require some service after a few weeks.



- Check the loading ramps for proper operation.

Note:

Remember to check the travel clearances of the carriage.
Do not let the unit run past the upper limit position.

- Before you close the carriage, ensure that all screws fixing the limit switches are secured.

Adjustment of motor current

On the electronic board you can adjust the maximum current of the drive motor and the maximum current of the platform actuator.

Adjusting the main motor:

Start on the lower landing with the full load capacity on the platform and drive upwards. While driving upwards, turn the potentiometer (R40) to the right until the lift stops. Now the maximum current is reached.

You have to turn back the potentiometer (R50) a little.

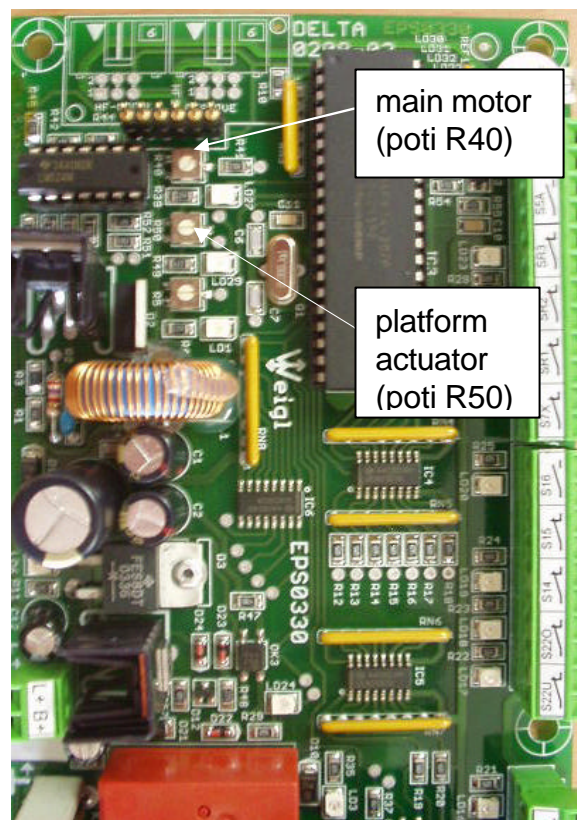
Try several times to drive up with the full load and the lift shouldn't stop.

Adjusting the platform actuator

While closing the platform with the landing control turn the potentiometer (R50) to the right until the actuator stops.

You have to turn back the potentiometer (R50) a little.

Close the platform again several times and the actuator shouldn't stop.



Place the labels

- Ensure all labels/stickers delivered with the lift are fitted correct on the stairlift before handover to the customer.
- The load label must always be fitted in a good visible area.
- Check the handwinding direction before fitting the label “UP” for the hand wheel!

Caution: All labels which are required on account of national determination must be provided by the installation company.

Last checks before using the stairlift

- Before going into operation, check the stairlift for correct measurements and prevent any danger to occur at the stairlift.
- With all limit blocks and interlock cams in place, unfold the platform and run the carriage up to the top of the system and back while checking the travel clearances of the carriage. If you encounter any problems, have the lift's serial number on hand and call *the installation company*.

Caution: Do not ride on the unit until the fasteners are tightened.

- Make sure that the travel clearances are correct and all strut fasteners tightened.
- When the landing is uneven and the loading ramp does not rest properly on the floor, adjust the ramps on the platform once more.
- Use the test- and inspection form and check all paragraphs! If there are any discrepancies, rebuild or adjust as necessary until you can fill in an OK in the certificate!

Caution: The filled test form must be brought to the installation company, checked by the installation supervisor and attached to the file of the respective commission.

Caution: The installation team is responsible for a proper carrying out of the plant. The plant have to be tested for secure working including its environment (structural influences)! Are there differences against the drawing, other influences or obvious defects which prevent a safe working it is not allowed to set the lift into operation.